

# Translating Science into Action

Chicago  
Wilderness

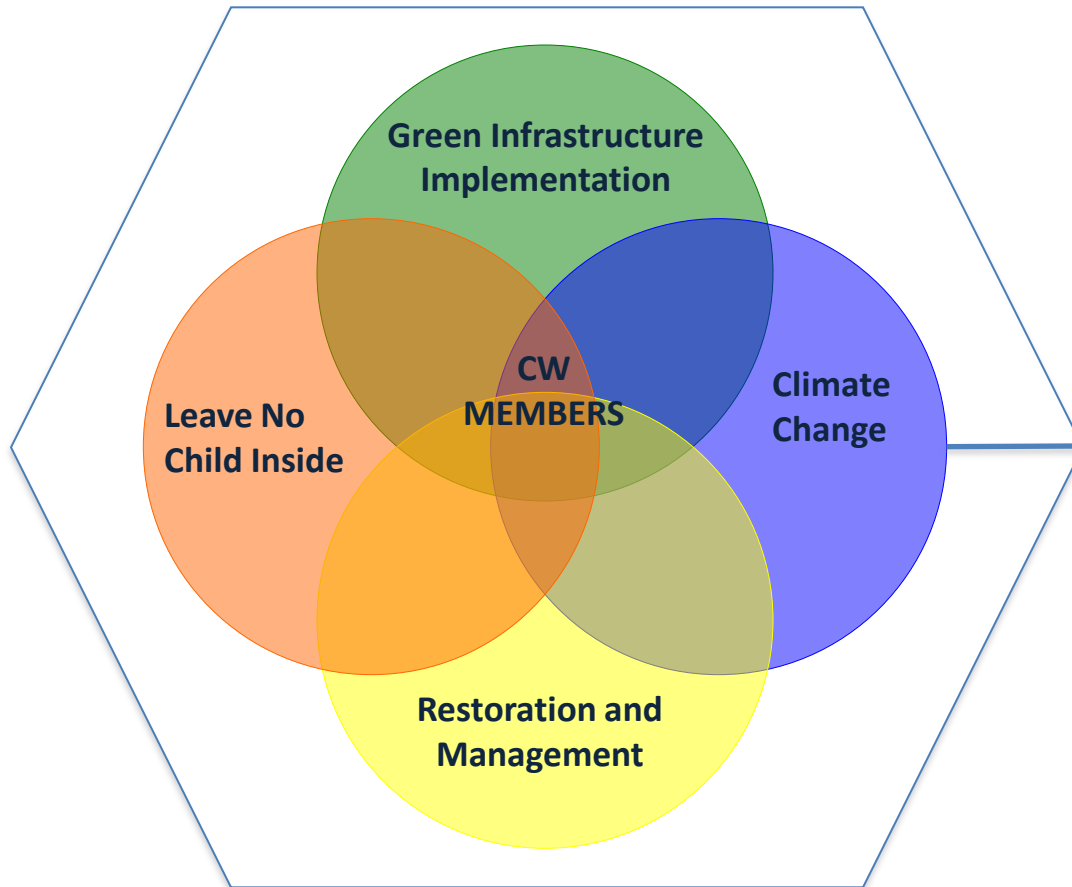


***Climate*ACTION**

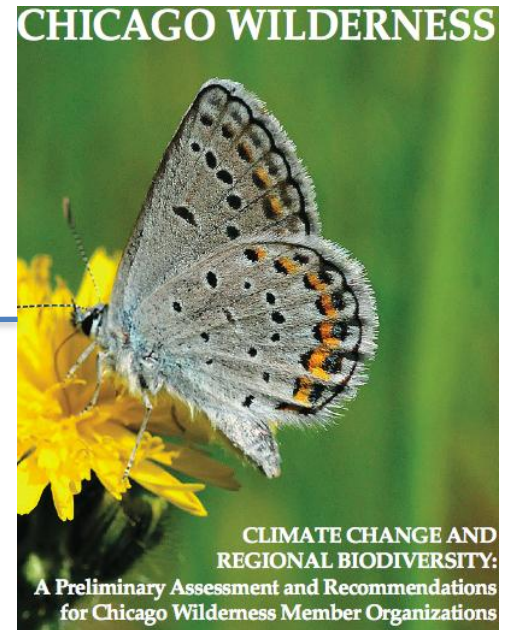
**Creating place-based climate adaptation strategies  
for the Chicago Wilderness region**

# Chicago Wilderness

## Strategic Initiatives



## Regional Biodiversity Recovery



# Chicago Wilderness Climate Action Plan for Nature





# Climate Action Plans

## City of Chicago Climate Action Plan

- Human population
- Buildings
- Transportation infrastructure
- Landscaping

- Urban forests
- Water infrastructure
- Vacant land

## Chicago Wilderness Climate Action Plan for Nature

- Rivers and lakes
- Restored natural areas
- Remnant natural areas
- Native species

Chicago  
Wilderness



# BIODIVERSITY RECOVERY PLAN

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## Climate Change Update



# Bridging the Gap(s)

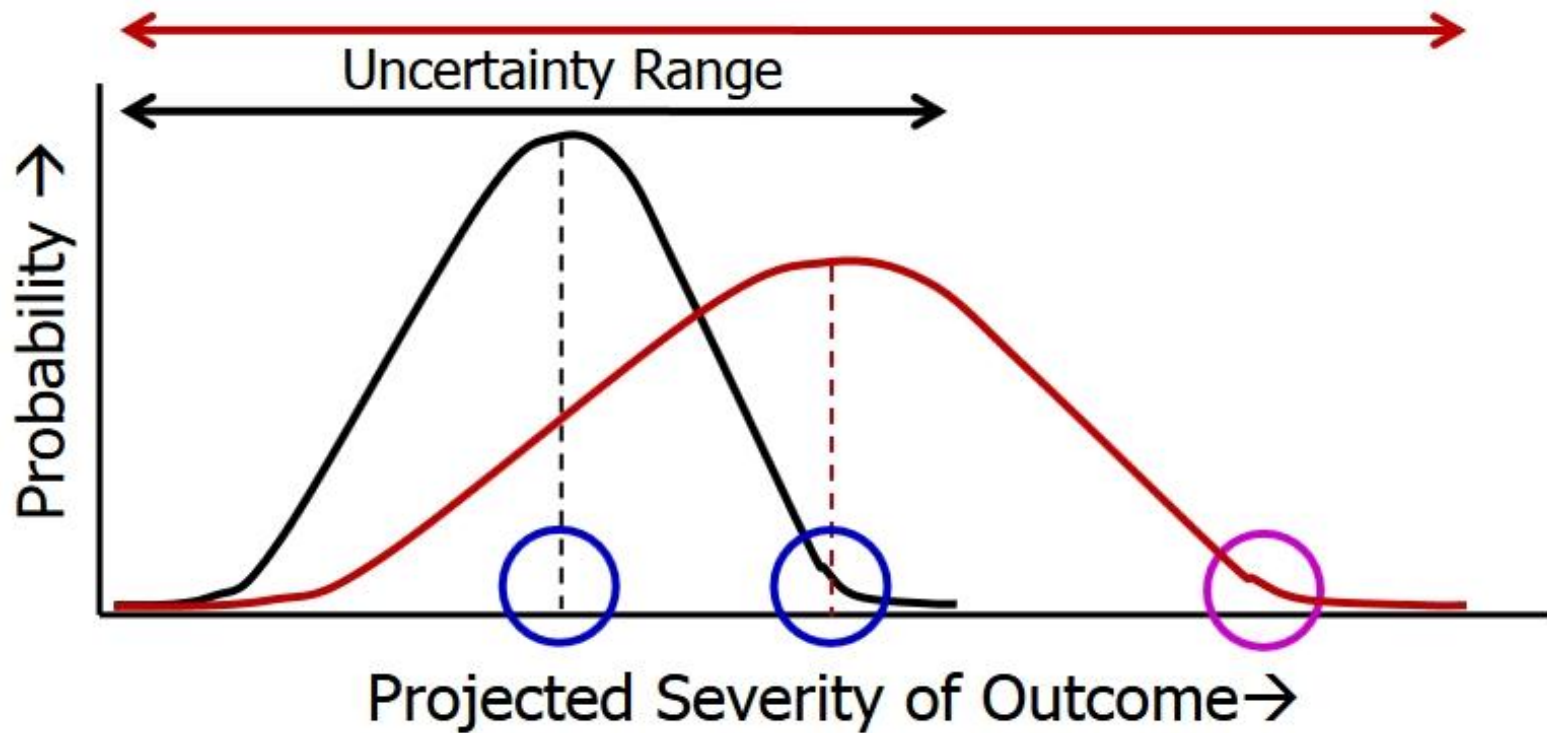








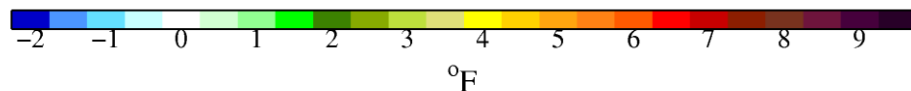
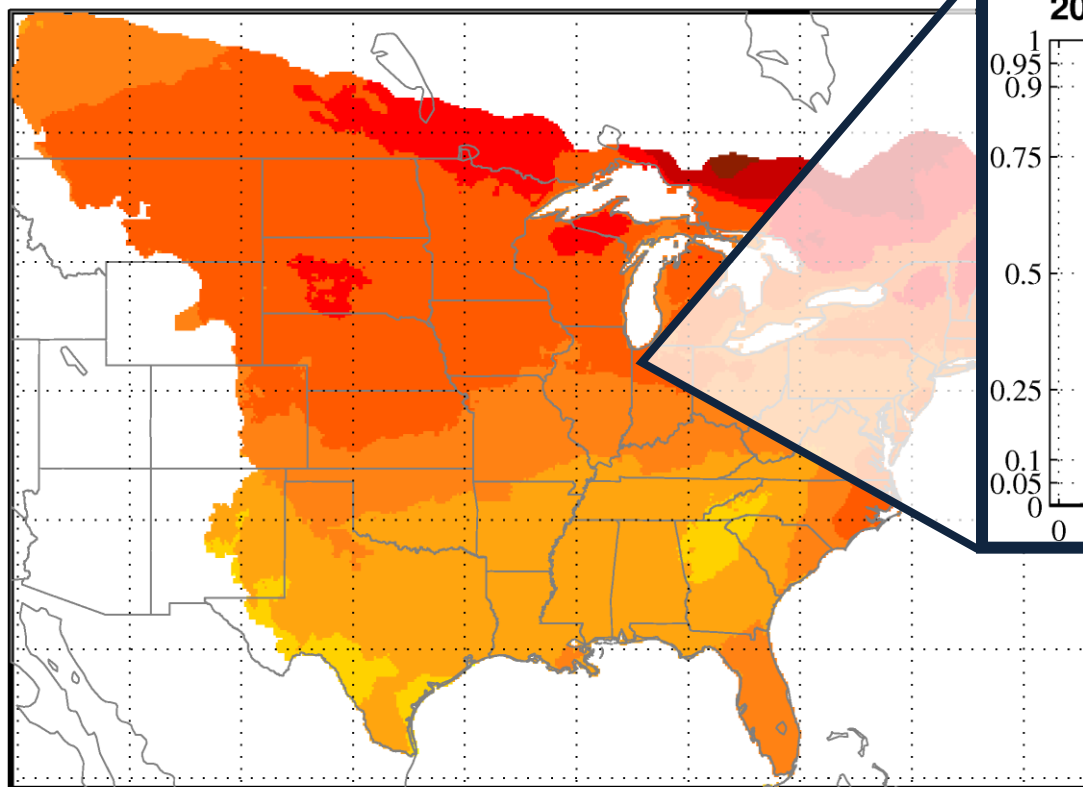
# Risk matrix



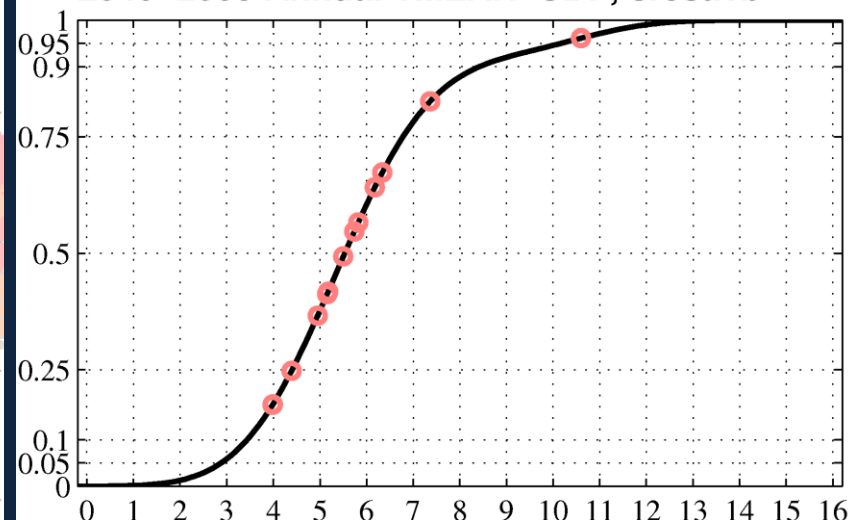


# Annual Daily Temperature Change

ANN: Model Mean SRESA1B TMean Difference (2050 – 1990)



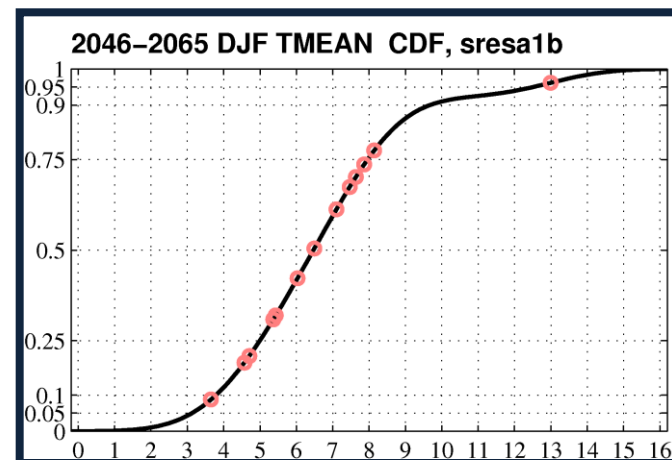
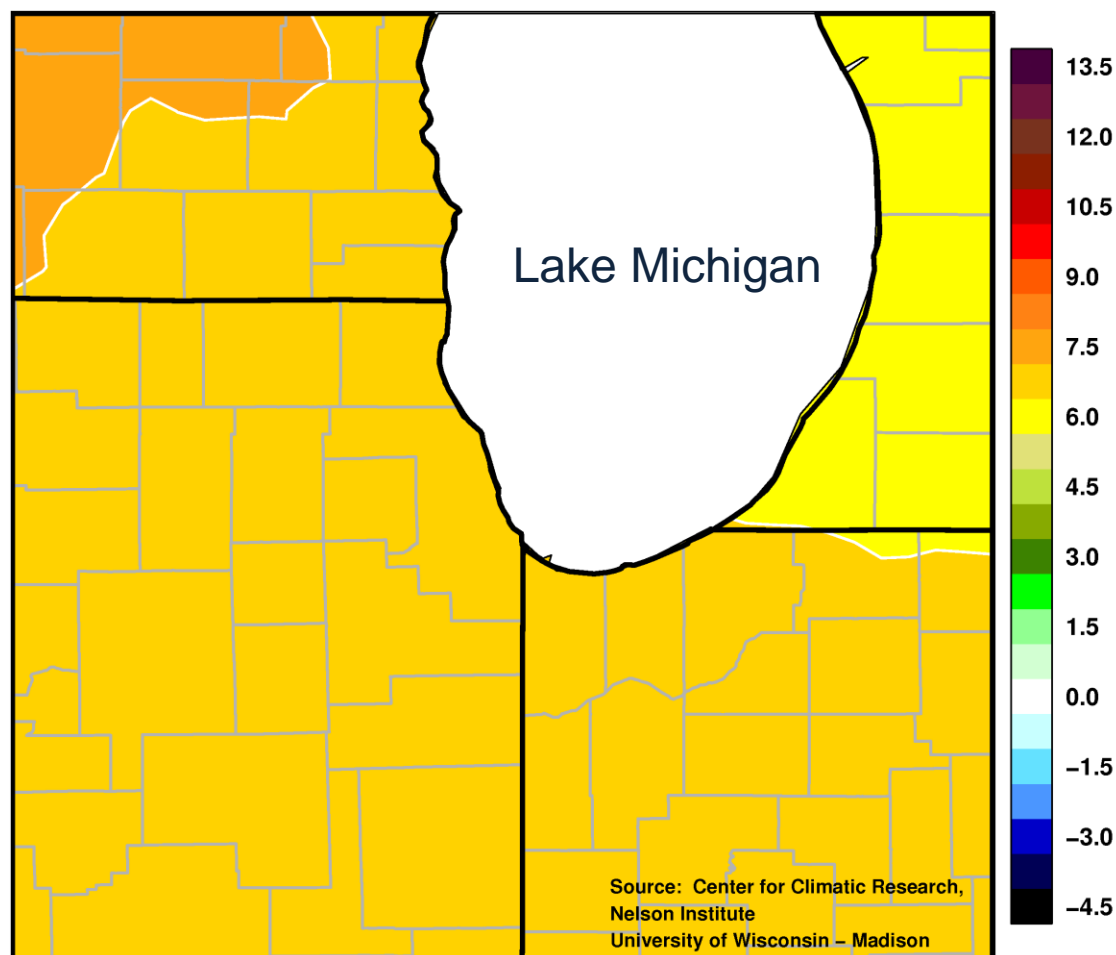
2046–2065 Annual TMEAN CDF, sresa1b



Area will warm by  
3° – 8° F by  
mid-21<sup>st</sup> century

# Winter Daily Temperature Change

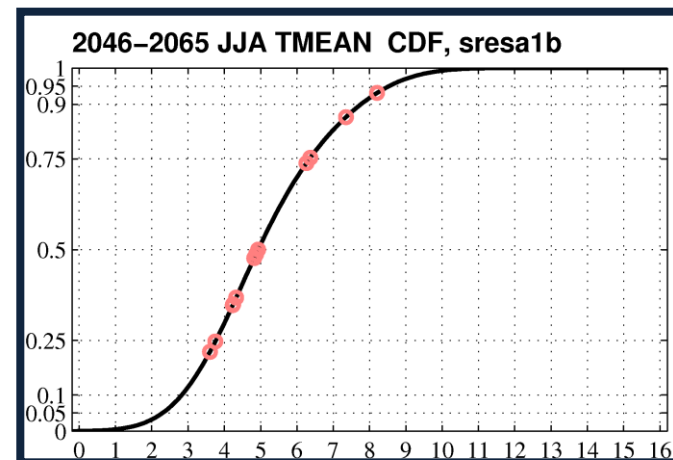
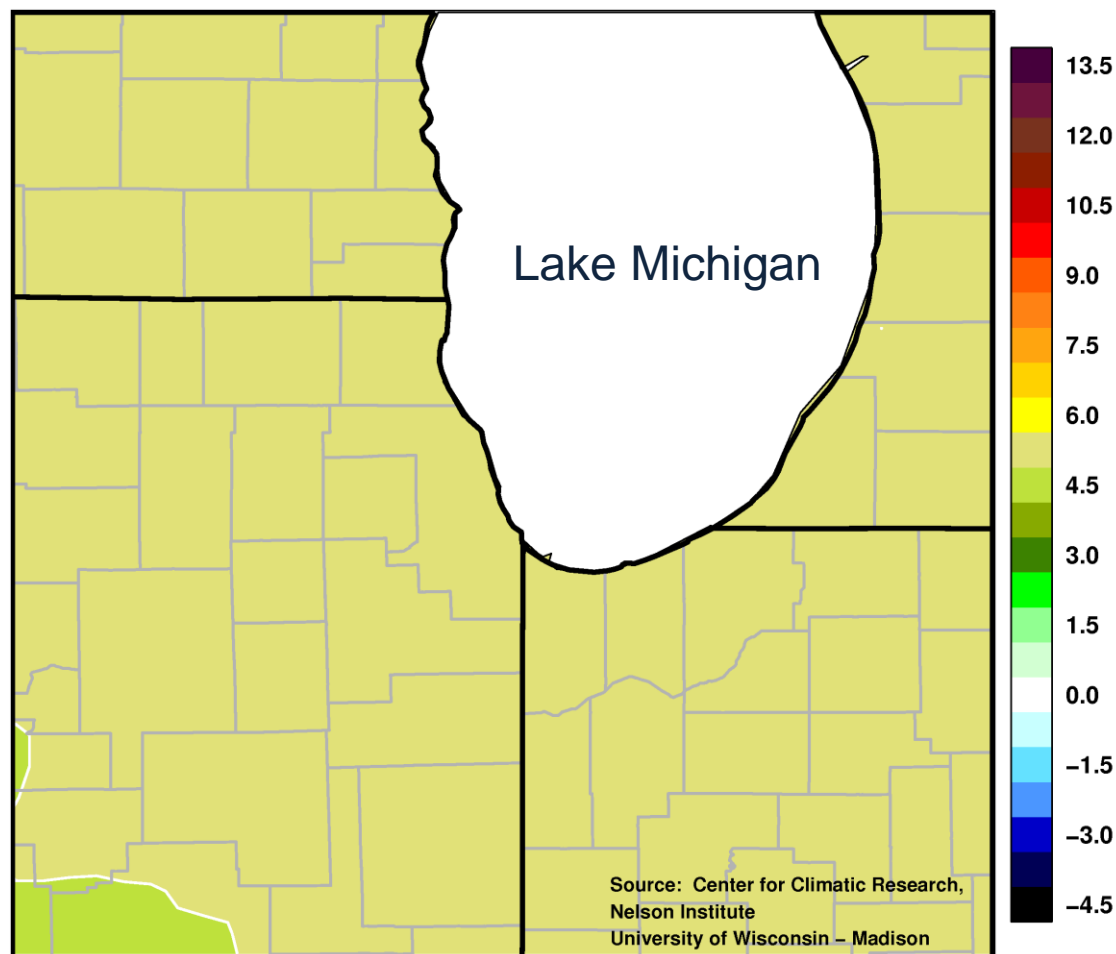
Projected Change in DJF Average Temperature ( $^{\circ}\text{F}$ )  
from 1980 to 2055 (A1B)



**Winter Average  
temperature will  
increase by  
4-10  $^{\circ}\text{F}$  by 2055**

# Summer Daily Temperature Change

Projected Change in JJA Average Temperature (°F)  
from 1980 to 2055 (A1B)

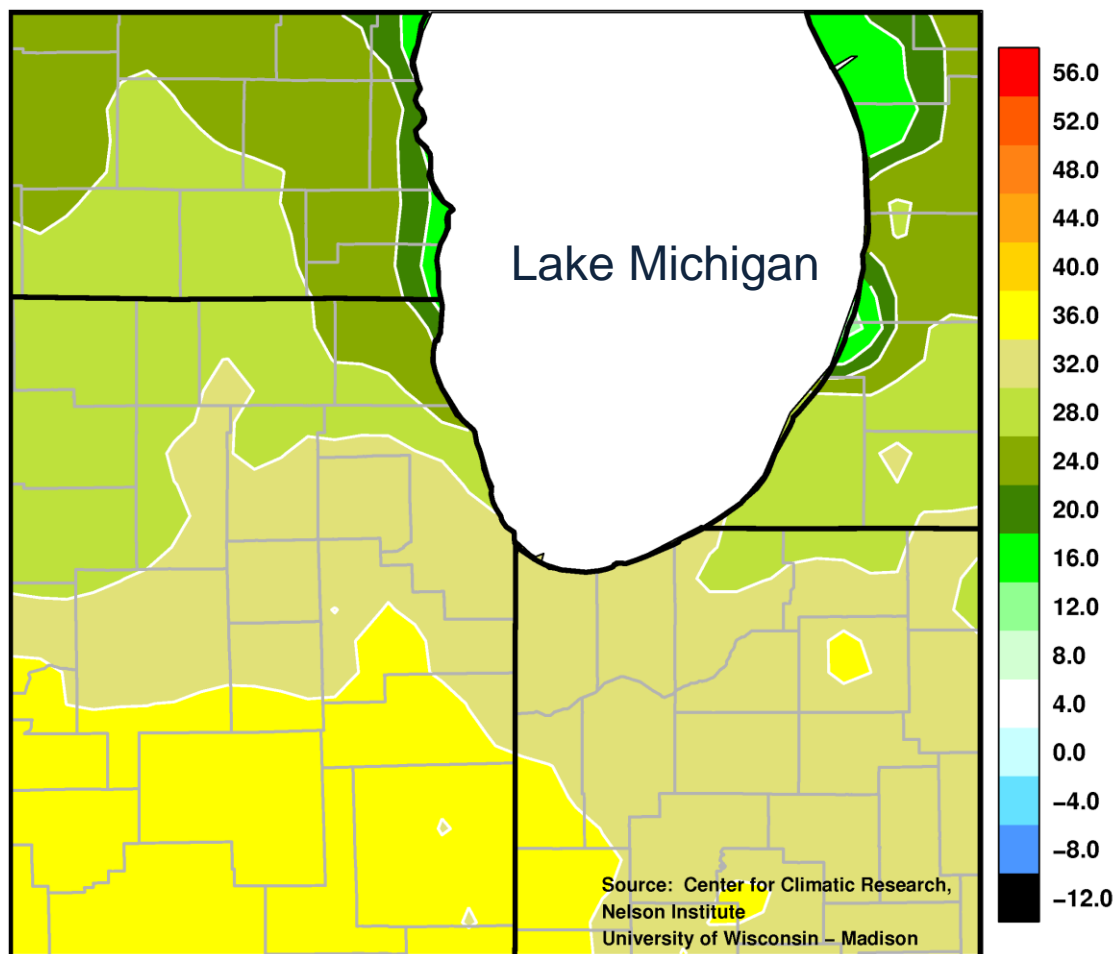


**Summer Average  
temperature will  
increase by  
3-8 ° F by 2055**

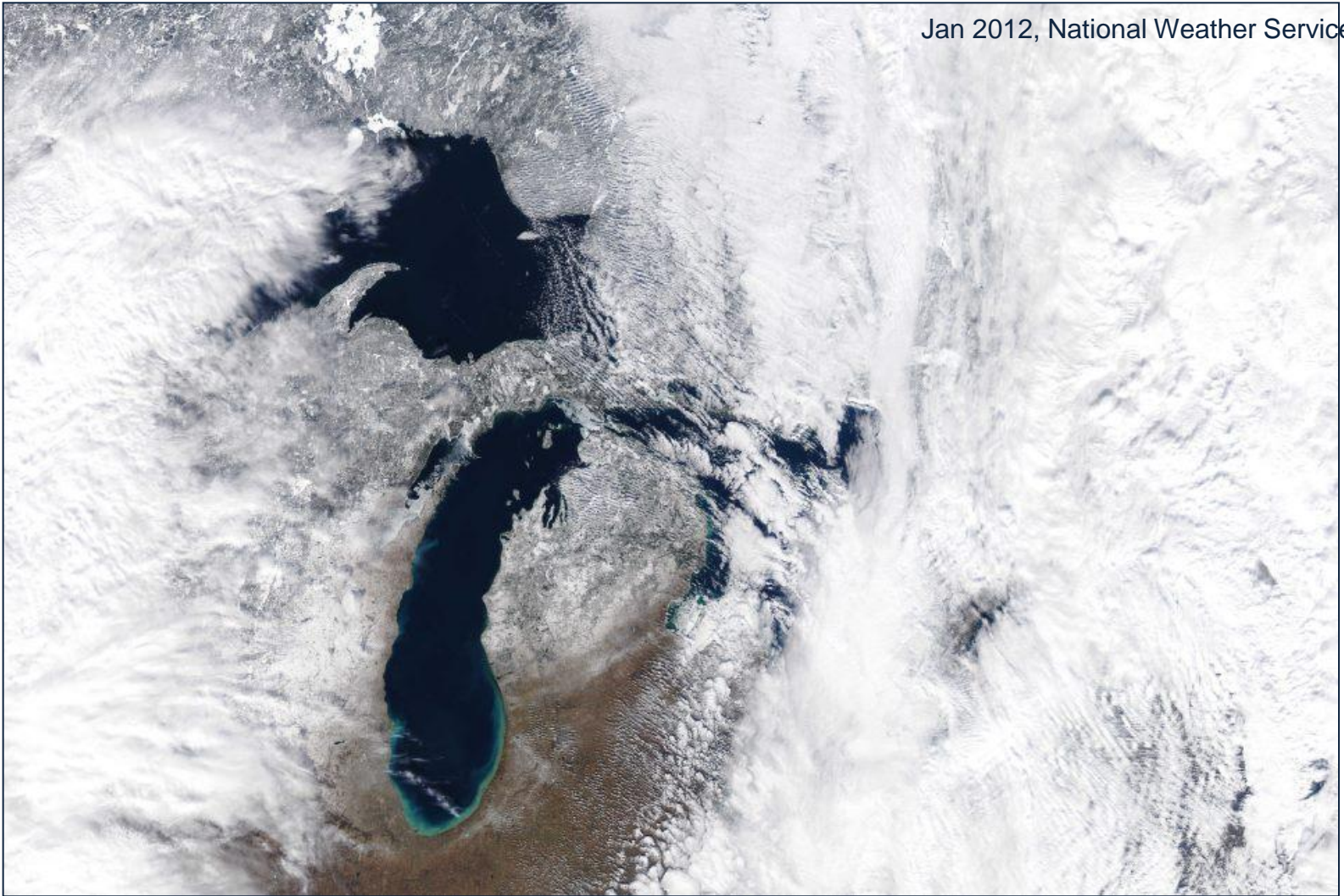


# Increased No. of Days > 90° F

Projected Change in Number of Days > 90 °F  
from 1980 to 2055 (A1B)



**Increase in the  
number of very  
hot days (>90° F)  
by ~ 4 weeks/year**



### **Lake Michigan 1973-2010**

- Water warmed by 3.3° F
- Winter air temperatures over lake warmed by 2.7° F
- Ice cover reduced by 77%

# Impacts to biodiversity



## Direct effects

- Temperature
- Precipitation
- Increased intensity of weather events



## Indirect effects

- Range shifts
- Predators/disease/invasives
- Timing of important life cycle events





# Impacts to plants/natural communities

## Weather impacts & extreme events

- Change in frost dates
- Change in freeze-thaw cycle
- Milder winters
- Increased evapo-transpiration
- Ice storms
- Droughts (hydrology)
- Floods
- Scouring (water, ice)
- High winds
- Persistence of snow cover

## Biotic/abiotic factors

- Range shift
- Community disaggregation
- Invasives/diseases/pests
- Fragmentation/isolation
- Herbivory
- Soil distribution

## Phenological & related changes

- Pollination
- Seed dispersal
- Dormancy
- Early bud burst

## Fire

Change in prescribed  
fire management



# Identifying climate-sensitive decisions

What management actions could reduce a natural area's vulnerability to specific climate-related impacts?

- Drought and heat stress
- Extreme storms (e.g., precipitation flashiness and flooding)
- Loss of key functional system or species

(this is how we did it)







## Main Page

Chicago  
Wilderness



# BIODIVERSITY RECOVERY PLAN

## Climate Change Update

*"It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change!" - Charles Darwin*

### Changing Landscapes in the Chicago Wilderness Region: A Climate Change Update to the Biodiversity Recovery Plan

Recognizing the potential of climate change to jeopardize the conservation investment that has taken place in the Chicago Wilderness region, in 2007 the Chicago Wilderness Council established Climate Change as one of four thematic initiatives, along with the Green Infrastructure Vision, Leave No Child Inside, and Restoring the Health of Local Watersheds. To plan and carry out the work of this initiative, CW established the Climate Change Task Force (Task Force) to "study and make recommendations on adaptation strategies and models for managing the region's natural resources in the face of climate change." In 2008, the Task Force produced *Climate Change and Regional Biodiversity: A Preliminary Assessment and Recommendations*.

- ✧ 100 + regional managers, scientists and researchers contributed
- ✧ place-based adaptation strategies for biodiversity
- ✧ research questions needed to inform climate-smart management
- ✧ web-based tool

Navigation

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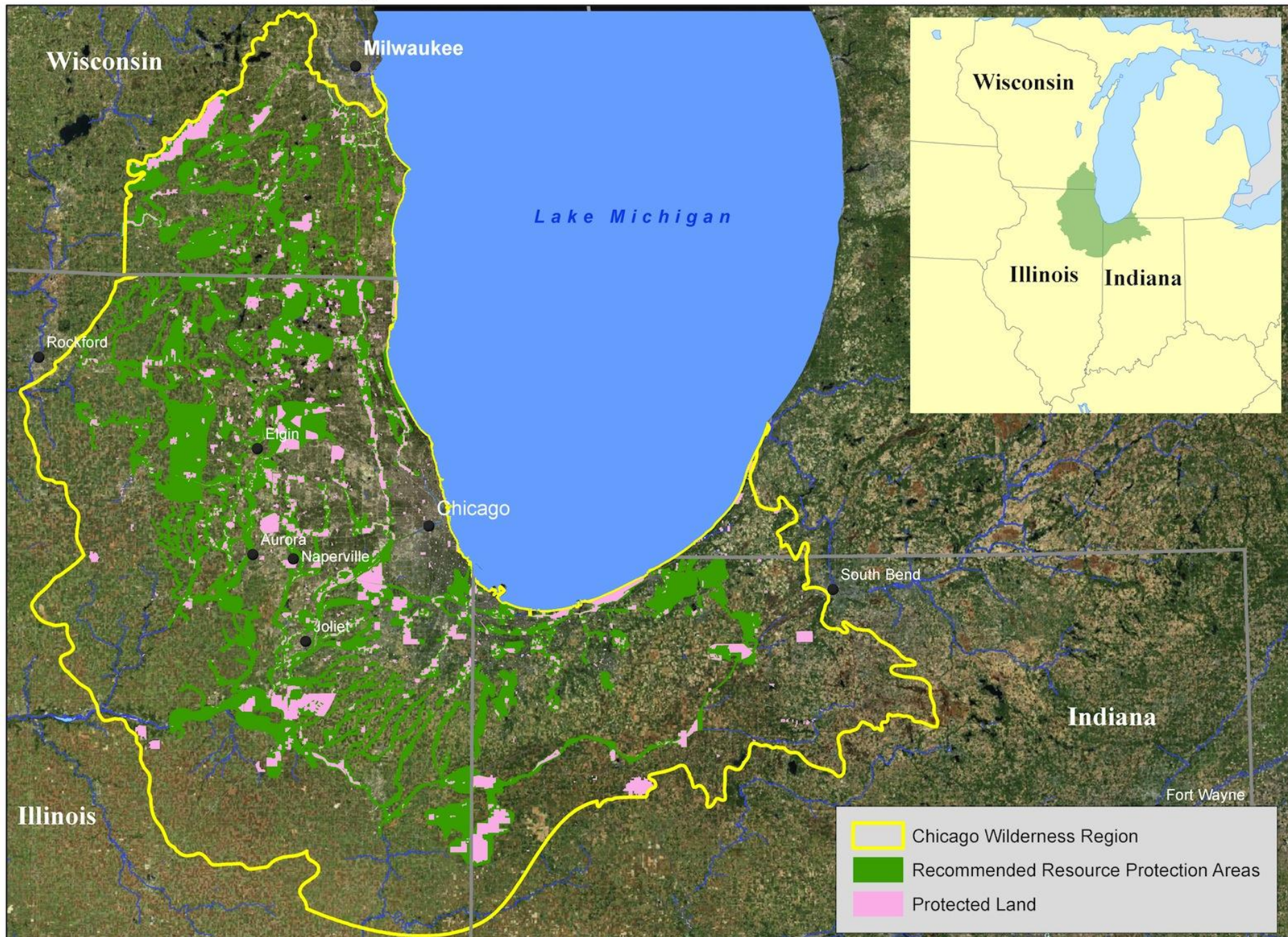
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Printable version

Permanent link



# Chicago Wilderness Green Infrastructure Vision



# Join the Climate Change Newsletter!

Contact  
[aderby@fieldmuseum.org](mailto:aderby@fieldmuseum.org)



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